

**AMENDMENTS TO THE CLAIMS:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently Amended) A system for measuring surface properties of a polishing pad, comprising:

a polishing pad having a polishing surface associated therewith;

an ultrasonic probe located over said polishing surface and configured to both transmit an ultrasonic signal to said polishing surface and receive a modified ultrasonic signal from said polishing surface without contacting said polishing surface, wherein said modified ultrasonic signal is a reflected signal used to calculate a reflectance spectrum of said polishing surface; and

a subsystem coupled to said ultrasonic probe and configured to determine a surface property of said polishing pad from said reflectance spectrum reflection.

2. (Original) The system as recited in Claim 1, wherein said ultrasonic probe comprises a single ultrasonic transducer.

3. (Original) The system as recited in Claim 1, wherein said ultrasonic probe comprises a first ultrasonic transducer configured for said transmitting and a second ultrasonic transducer configured for said receiving.

4. (Original) The system as recited in Claim 2, wherein said transmitted ultrasonic signal is between about 2 MHz and about 3 MHz and an air gap located between said probe and said polishing surface is between about 12 mm and about 25 mm.

5. (Original) The system as recited in Claim 4, wherein said transmitted ultrasonic signal is about 3 MHz and said air gap is about 12.5 mm.

6. (Original) The system as recited in Claim 1, wherein said polishing pad comprises:

a thermoplastic foam substrate; and

a polishing agent coating said polishing surface of said substrate.

7. (Original) The system as recited in Claim 6, wherein said thermoplastic foam substrate comprises a crosslinked polyethylene closed-cell foam.

8. (Original) The system as recited in Claim 6, wherein said polishing agent is selected from a group of ceramics consisting of:

Silicon Dioxide;

Titanium Dioxide;

Tetraethoxy Silane Polymer; and

Titanium Alkoxide Polymer.

9. (Original) The system as recited in Claim 6, wherein said polishing agent is selected from a group of polymers consisting of:

Polyalcohols; and

Polyamines.

10. (Original) The system as recited in Claim 1, wherein said surface property is selected from the group consisting of:

Density;

Surface Texture; and

Visco-Elasticity.

Claims 11-21 (Canceled)